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ABSTRACT

In 1998, the Southern Regional Education Board began using "High Schools That Work" (HSTW) strategies to improve urban student achievement. HSTW staff compared data from 1998 and 2000 HSTW assessments and examined the performance of career-bound students from 55 urban high schools. Results offer information on progress made in raising urban students' achievement, what works in raising urban high school students' achievement, challenges to improving achievement, and how states and districts can improve urban high schools. More urban students met HSTW performance goals for reading, mathematics, and science in 2000 than 1998, though there was a major gap between the achievement of students at urban high schools and at all HSTW sites (51 percent of students at all HSTW sites met the achievement goals, while only 39 percent did at urban sites). Actions that helped improve urban high school student achievement included increasing students' access to rigorous academic and technical studies and using research-based teaching methods. Challenges urban schools faced included attracting and retaining teachers who knew their subject matter and could engage students in learning and involving the entire faculty in raising students' literacy skills. States and districts can take such steps as providing leadership teams and offering teachers in low-performing schools continual, high quality professional development. (SM)

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HIGH SCHOOLS THAT WORK

Research Brief

SREB

The 2000 *High Schools That Work* Assessment: Improving Urban High Schools

by Gene Bottoms, Joanna Hornig Fox and Thomas New

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In 1998 the Southern Regional Education Board — with support from the Mott Foundation — began an effort to use *High Schools That Work* strategies to improve student achievement in urban schools. SREB created a network of eight districts and began working with state and district leaders to provide these urban schools with technical assistance and professional development.

Today, 76 high schools in the eight urban districts are committed to using the *HSTW* goals and key practices to raise student achievement. In working to better prepare students for further study and jobs, districts and schools look to the *HSTW* achievement goals in reading, mathematics and science, which are linked to performance levels defined by the National Assessment of Educational Progress. (See the sidebar on page 3.)

HSTW staff compared data from the NAEP-based *High Schools That Work* Assessments of 1998 and 2000 and looked at the performance of career-bound students[1] from 55 urban high schools that participated in the assessment in both years. The results of these comparisons offered some answers to the following four questions:

- What progress has been made in raising the achievement of urban students?
- What works in raising student achievement in urban high schools?
- What challenges do urban schools face in improving student achievement?
- What can states and districts do to improve urban high schools?

What progress has been made in raising the achievement of urban students?

More urban students met the *HSTW* performance goals for reading, mathematics and science in 2000 than in 1998. However, a major gap still exists between the achievement of students at urban high schools and at all *HSTW* sites. (See Table 1.) About the same percentages of urban students and students from all *HSTW* sites completed the *HSTW*-recommended academic curriculum. In the urban schools, average scores were significantly higher in all three academic areas for students who completed the recommended curriculum than for those who did not.

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[1] Career-bound students are the 60 percent to 65 percent of high school students who plan to work, attend a two-year technical or community college, enroll in a four-year college or university with an open admissions policy, or enter the military after high school graduation.

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Table 1
Percentages of students who met the *HSTW* achievement goals, 1998 and 2000

	Urban sites		All *HSTW* sites
	1998	2000	2000
Reading	36%	39%	51%
Mathematics	43	47	61
Science	34	38	55

Urban students who completed the *HSTW*-recommended English curriculum had an average reading score of 276 — only three points below the *HSTW* goal of 279. Those who completed the recommended mathematics curriculum had an average mathematics score of 292 — only three points below the *HSTW* goal of 295. However, science achievement lagged for students who completed the recommended science curriculum. Their average score of 280 was 12 points below the *HSTW* goal of 292. (See Table 2.)

One reason for the low science scores is that most urban schools lack science labs with adequate supplies and modern equipment. This, combined with the fact that many urban schools have too few certified science teachers with strong content knowledge, results in many students having science classes that are textbook-based and lack challenging, lab-based assignments. Students without well-prepared teachers are at a major disadvantage. In addition, many urban high schools suffer from ongoing vacancies and/or rapid turnover in science. These shortages — combined with low graduation requirements in science — leave urban students unprepared for further study that leads to jobs in growing scientific and technical fields.

The bad news is that the average reading, mathematics and science scores of urban students who completed the *HSTW*-recommended academic curriculum are significantly lower than those of students at all *HSTW* sites. The good news is that *High Schools That Work*'s urban high schools are moving in the right direction.

Table 2
Achievement of students who completed and did not complete the *HSTW*-recommended curriculum

		Urban sites			All *HSTW* sites		
	HSTW performance goal	Percentage of students who completed the curriculum	Average score of students who completed the curriculum	Average score of students who did not complete the curriculum	Percentage of students who completed the curriculum	Average score of students who completed the curriculum	Average score of students who did not complete the curriculum
English	279	45%	276	257	45%	283	269
Mathematics	295	89	292	272	85	303	281
Science	292	59	280	264	62	295	280

Improvement efforts must focus on:

- raising expectations;
- getting all students to complete a core of advanced-level academic courses and getting students to complete either a technical or an academic concentration;
- holding student work in every course to higher standards;
- giving students the extra help needed to meet higher course standards;
- having teachers with good content knowledge and appropriate teaching skills who can motivate students to learn challenging content;
- involving parents in the guidance and advisement process;
- using data to guide improvement efforts; and
- encouraging school leaders to pay more attention to curriculum, instruction and student achievement — and preparing them to do so.

Meeting *HSTW* achievement goals: What students know and can do

Reading (279)

The current reading goal corresponds to NAEP's "basic" level of performance, a standard for partial mastery that is lower than the "proficient" standard. The long-range intent is to increase the goal to the proficient level. At the basic level, students can, among other things:

- seek and use information from manuals, journals, periodicals and other documents;
- use information from several sources to make interpretations, draw conclusions and identify and solve stated problems; and
- recognize limitations in available information.

Mathematics (295)

The mathematics goal corresponds to NAEP's proficient level of performance, a standard for mastery of challenging subject matter. Students can, among other things:

- understand concepts from algebra, geometry and probability;
- apply concepts from algebra, geometry and probability in solving multistep problems; and
- explain reasoning in various problem-solving situations.

Science (292)

The science goal corresponds to NAEP's proficient level of performance, a standard for mastery of challenging subject matter. Students can, among other things:

- demonstrate understanding of key life and physical science concepts;
- apply knowledge, skills and reasoning to interpret scientific and technical data from tables;
- make inferences about outcomes of experimental procedures;
- evaluate the appropriateness of an experiment's design; and
- interpret scientific text and graphs.

What works in raising student achievement in urban high schools?

Several actions have been linked to improved student achievement in urban high schools.

- **Increase students' access to rigorous academic and technical studies; get students to do quality assignments and meet higher expectations.**

Urban students who completed the *HSTW*-recommended curriculum had significantly higher achievement in reading, mathematics and science than students who did not complete this curriculum. (See Table 2.) However, even the students who completed the recommended curriculum fell short of the *HSTW* goals in all three academic subjects. It is not enough to complete the *HSTW*-recommended curriculum if the courses are not challenging and if teachers do not hold students to high standards.

Students who exceeded the *HSTW*-recommended curriculum in mathematics had scores that met or exceeded the *HSTW* goal. The career-bound seniors who had completed algebra before ninth grade (52 percent of all students assessed) had an average mathematics score of 296, compared with an average score of 284 for those who did not take algebra before grade nine. Students who completed four years of mathematics (57 percent of those assessed) had an average mathematics score of 295, compared with an average score of 285 for students who completed only three years of mathematics (the mathematics component of the *HSTW*-recommended curriculum). The urban students who completed advanced mathematics courses, such as Algebra III/trigonometry, represented 29 percent of the urban students assessed and had an average mathematics score of 307. Their average score exceeded that of all students in the *HSTW* network.

Science achievement showed similar results. Urban students who completed college-preparatory biology had an average science score of 291, just one point below the *HSTW* goal of 292. Those who completed basic biology had an average science score of 251, and those who completed general biology had an average score of 267. Getting all students to take college-preparatory science courses and giving end-of-course exams would improve urban youths' science achievement greatly. Schools also need to recruit and retain qualified teachers who will use lab-based teaching methods and to offer these teachers the professional development they need.

Urban students achieve at higher levels when they have access to modern career programs that blend academic and career/technical content. Students who completed concentrations in business, computer and health sciences studies — or who took technical courses such as electronics and computer-assisted drafting and design — had average mathematics scores that met or

Table 3
Average scores of urban students who used academic skills in completing vocational assignments

	Percent of students	Average reading score	Average mathematics score
Used reading and mathematics daily or weekly in completing assignments	39%	270	293
Seldom or never used reading and mathematics in completing assignments	61	261	285

The *HSTW*-recommended curriculum

- four credits in English courses with content and achievement standards comparable to college-preparatory/honors courses
- three credits in mathematics courses, including two credits in courses with content and achievement standards comparable to college-preparatory Algebra I, geometry or Algebra II
- three credits in science, including two credits in courses with content and achievement standards comparable to college-preparatory biology, chemistry, physics or applied physics
- four credits in a planned sequence of career and technical studies and two related credits, including a computer literacy course

exceeded the *HSTW* goal of 295. These courses require students to work with databases; to use measurement, scaling and proportion; and to use algebra and geometry in completing work-related projects and tasks. The 39 percent of urban students who said they used reading and mathematics daily or weekly in completing assignments for their career/technical courses had significantly higher achievement than students who used reading and mathematics less frequently. (See Table 3.) Students who completed concentrations in drafting and design had average science scores that exceeded the *HSTW* goal. Quality drafting and design programs raise students' scientific literacy because they require students to document the steps taken in completing assignments, recognize that every action has a reaction, describe the properties of materials, understand how various parts interact with one another, and design structures to withstand stress.

High-achieving urban students say their teachers know the subject matter, clearly convey their expectations of student work and hold students accountable for doing assignments. For example, students scored significantly higher in reading, mathematics and science when teachers described exactly what was required to earn A's or B's in their courses. Students who said they were required to revise essays several times to improve them — 32 percent of urban students assessed — had an average reading score of 274, compared with an average score of 266 for students who seldom or never revised their essays.

Urban students learn more when teachers have high standards for work done both in and out of class. The 2000 *HSTW* Assessment showed that urban students achieved at higher levels when teachers expected a great deal of effort.

- Students who often had to write in-depth explanations of projects or activities (15 percent of those assessed) had an average reading score of 271, compared with 266 for students who did so less frequently.
- Students who did at least one hour of homework daily (62 percent of urban students assessed) had higher average scores in reading, mathematics and science than did students who did less homework.
- Students who read for at least two hours per week outside of class (27 percent of those assessed) had an average reading score of 276, compared with 263 for the students who did less reading.
- Students who said they had all of the above experiences — writing in-depth explanations of projects or activities, doing at least one hour of homework and reading for at least two hours outside of class — had an average reading score of 279.

Teachers in urban high schools can advance reading achievement by requiring all students to write in-depth explanations of projects in all classes, assigning daily homework and getting students to read at least two hours per week outside of class.

Urban students learn more when their teachers have deep knowledge of the subject matter and know how to engage students in doing quality work. The highest-performing urban students in 2000 were the 22 percent who completed the *HSTW*-recommended curriculum and were held to high standards. These students met the *HSTW* performance goals in reading, mathematics and science, and their average mathematics and science scores exceeded those of college-preparatory students nationally. (See Table 4.)

● Use research-based teaching methods in urban high schools

Reading, mathematics and science achievement improves if teachers use methods that engage students and motivate them to meet standards. Students have higher reading scores if they read and report on several books and often discuss and debate what they have read.

Achievement in mathematics improves when teachers encourage students to talk about mathematics, study in teams and use technology to solve mathematics problems. Students who used graphing calculators to complete mathematics assignments daily or weekly had an average score of 294, compared with a score of 289 for students who seldom or never used graphing calculators. Students who worked in groups to solve mathematics problems at least weekly had an average score of 292, compared with a score of 287 for students who worked alone.

Students whose science teachers required them to write and talk about science had higher science scores than students who lacked these experiences. Students who made science presentations once or twice a year had an average science score of 277, compared with a score of 274 for students who did not make presentations. Students who prepared written reports on a science topic several times a year had an average score of 276, compared with 269 for students who never had

Table 4
Average scores of *HSTW* Award of Educational Achievement* recipients and nonrecipients and college-preparatory students**, 2000

	Percent of *HSTW* students	Average reading score	Average mathematics score	Average science score
Students who received the *HSTW* Award of Educational Achievement	22%	299	323	314
Students who did not receive the award	78	257	281	262
National college-prep students	Not applicable	302	317	307

* The *HSTW* Award of Educational Achievement is given to students who complete the *HSTW*-recommended curriculum and meet the performance goals in all three academic areas.

** National college-preparatory students are 12th-graders who took the National Assessment of Educational Progress exams and indicated that they were pursuing a college-preparatory curriculum.

Improving urban high schools is about giving students early and continuous access to challenging academic courses taught by teachers who know their subject matter, who believe all students can learn it and who are passionate about getting students to make the effort to learn at high levels.

to write such reports. Students whose science teachers often related science to real-world problems had an average score of 277, compared with 264 for students whose teachers did not connect the content to the workplace.

- **Provide students with the personal support and extra help they need to complete challenging assignments.**

Urban students achieved at higher levels if their teachers were committed to helping them meet standards. The 58 percent of students who said their teachers usually were available to provide extra help had significantly higher achievement than did students whose teachers did not help them.

Students whose teachers and adult mentors provided one-on-one direction and encourage-

Engaging students in learning

The 2000 *High Schools That Work* Assessment showed that urban teachers are doing too little to engage students in active learning.

- Only 46 percent of students read several books a year outside of English classes and reported on main ideas.
- Only 42 percent made oral presentations on projects or assignments several times a year.
- Only 21 percent often discussed and debated what they had read with other students in English classes.
- Only 31 percent worked in groups daily or weekly to solve mathematics problems.
- Only 17 percent daily or weekly defended orally processes used to solve mathematics problems.
- Only 49 percent daily or weekly used graphing calculators to complete mathematics assignments.
- Only 31 percent read assigned books or articles on science several times a year.
- Only 33 percent prepared written reports on science subjects several times a year.
- Only 35 percent had science teachers who often related science to real-world problems and issues.

Table 5
Average scores of students whose teachers did and did not provide extra help

	Teachers frequently were available	Teachers were not available
Reading	271	243
Mathematics	294	267
Science	279	245

ment outpaced students who lacked such support. For example, students who had work-site mentors to teach them about work habits, communication and customer relations had higher achievement in reading and mathematics than students who did not receive such support.

Urban high schools can improve student achievement by giving students extra help to meet higher standards and by hiring teachers who will "go the extra mile" to help students learn. (See Table 5.)

- **Help students in setting educational and career goals, align programs of study to the goals and involve parents in setting goals and reviewing progress.**

An effective guidance and advisement system is important in bringing focus and purpose to urban students' high school studies. Urban students who received early and continual information and assistance in setting goals for after high school and who were encouraged to take challenging courses had higher achievement than those who did not receive such assistance. The 2000 *HSTW* Assessment showed that urban students achieved at higher levels when they:

- received assistance in planning high school programs of study when they were in grade eight (29 percent received such assistance);
- were encouraged to take more challenging mathematics and science courses (25 percent received such encouragement); and
- received assistance from teachers and counselors in planning programs of study to achieve goals for after high school (23 percent received such assistance).

Table 6
Percentages of students meeting *HSTW* goals at Bok Technical High School

	1998	2000
Reading	12%	56%
Mathematics	20	46
Science	20	38

Bok Technical High School raises expectations, changes what and how students are taught

Bok Technical High School in Philadelphia, Pa., illustrates the kind of improvement an urban high school can make if district and school leaders and teachers raise expectations and make significant changes in what and how students are taught. (See Table 6.)

For each academic area (reading, mathematics and science) in 1998, no more than 20 percent of Bok seniors met the *HSTW* goal. In 2000, 56 percent met the reading goal, 46 percent met the mathematics goal and 38 percent met the science goal.

Bok's dedicated school leaders and a highly competent staff decided to teach a more demanding academic core to more students. A summer program and a "small learning community" for ninth-graders strengthened the English and mathematics skills of students who were making the transition from the middle grades to high school.

School leaders provided faculty members with professional development in reading, mathematics and the integration of academic and career studies. They used data and provided technical assistance to engage teachers in the school improvement process and to give teachers the support they needed.

The most dramatic change was in reading. In 1998, 85 percent of students said they never had to revise essays to improve their quality, compared with only 2 percent in 2000. The percentage of students who read at least two hours per week outside of class rose from 30 percent in 1998 to 45 percent in 2000.

Increased emphasis on reading and writing in both academic and career/technical classes was just as dramatic. Only 29 percent of students in 1998 had to complete a written report for mathematics, compared with 54 percent in 2000. Sixty-eight percent of students in 2000 said they read science articles frequently, compared with 56 percent in 1998. The percentage of students who had to read daily or weekly to complete assignments in vocational classes increased by 30 percentage points between 1998 and 2000.

Significant improvement was made in the number and type of mathematics courses taken. In 1998, only 22 percent of seniors had completed four years of mathematics. By 2000, 98 percent of seniors had taken four years of mathematics. In 2000, 98 percent of students completed Algebra II, compared with 72 percent who had done so in 1998.

The percentage of seniors taking science went from 60 percent in 1998 to 87 percent in 2000. In 1998, 11 percent of students had taken physics. By 2000, 66 percent had taken either physics or applied physics for one or two years.

What challenges do urban schools face in improving student achievement?

The overall challenge is to create "healthy" schools in which students do challenging academic and technical work and teachers and students enjoy what they are doing. To do so, urban schools need to take several important actions.

- **Recognize that it is possible to improve urban high schools and that change has occurred in a wide variety of settings.**

Urban leaders and teachers need to believe that urban high schools can make a difference in students' lives. They should extend to all students the practices that have been effective for some students.

- **Attract and retain teachers who know their subject matter and can engage students in learning.**

Urban high schools cannot expect to catch up to high-performing high schools unless they hold students and teachers to higher standards of content knowledge and performance and give them the support they need to meet these standards. One-half of the teachers at urban high schools (56 percent in science) have been there five years or less. As a result, continuity in a comprehensive school-improvement effort is difficult. More urban teachers than teachers at other *HSTW* sites see little support from the community, consider student behavior to be disruptive to teaching and learning, and doubt that students are prepared for challenging work.

- **Choose principals who are instructional leaders, can involve the faculty in continuous improvement and can share with teachers, students and parents a vision of a high-performing high school.**

Many teachers at urban *HSTW* sites doubt that they have effective leaders. For example, only 40 percent of teachers agreed strongly that the school's goals and priorities are clear, that teachers constantly evaluate the school's programs, and that teachers are encouraged to revise the curriculum to improve student achievement. Fewer than half of teachers say school leaders expect them to reflect on professional-development experiences and to put what they learn into practice. Often, urban school leaders focus only on "keeping order." Urban leaders need to be able to raise expectations, increase academic rigor, encourage hands-on learning, involve parents, provide sustained and focused professional development, make better use of time, and organize the school into "small learning communities." Use teams of academic and career/technical teachers to work with students around a career theme or academic theme.

- **Involve the entire faculty — academic, career/technical, fine arts and physical education teachers — in raising students' literacy skills.**

Urban students face an uphill struggle to success in high school because of their shortcomings in reading, comprehending and interpreting information; analyzing and synthesizing information; and constructing critical and supportive responses to materials read. All urban teachers

need preparation and ongoing support in incorporating reading and writing into all courses. Urban students' current reading achievement shows that their high school courses require too little reading, interpreting and analyzing.

- **Increase the number of middle grades students who enter grade nine ready to do high school work.**

Too many urban students are not prepared for the transition from the middle grades to high school. Many urban systems have high failure rates in grades nine and 10 and have 40 percent or more students entering grade nine and failing to graduate four years later. Aligning the curriculum and performance standards between middle grades schools and high schools needs much more attention. Nearly half of urban high school teachers said in 2000 that they were unfamiliar with the content and goals of courses taught in the middle grades. The lack of communication and collaboration among middle grades and high school leaders and teachers makes it difficult for students to adjust to high school.

A transition program for grades seven through nine will help students catch up and complete high school successfully. Urban schools must devote more time to reading and mathematics in grades seven through nine. Urban students need adult mentors to make sure they develop goals for after high school, complete challenging programs of study and receive extra help as needed.

- **Make the last two years of high school count in preparing urban youths for further study and work.**

Seventy-eight percent of urban career/technical students said they wanted to continue their education beyond high school. However, many urban career/technical students are not prepared for success in college — and they do not realize it. Only 41 percent of urban students took college-preparatory English in grade 12, only 26 percent completed Algebra III/trigonometry and only 42 percent completed four years of science. For many urban students, the senior year of high school is a waste of time. Urban students need "reality checks" and someone to advise them about courses to take in grades 11 and 12 to achieve their goals for after high school. **These students should complete four solid academic courses each year in grades 11 and 12 and a concentration in career/technical studies or additional academic studies.**

What can states and school districts do to improve urban high schools?

The goal of *HSTW*'s urban schools network is to help more students meet high standards by completing a challenging academic program of study and either four additional credits in advanced academic studies or a concentration in a career/technical field. Many students in urban schools are not being prepared for college or the workplace.

Urban high schools that are not meeting the *HSTW* goals need to confront the challenges head-on, build on existing strengths, and commit to a multiyear program of continuous improvement. States and districts need to develop policy initiatives that will make effective school-improvement practices available to all students.

SREB has learned several lessons from its work with urban high schools.

Lesson 1: Urban students who have early and continuous access to high-level academic courses and modern career/technical courses achieve at higher levels. States and urban districts need to establish and fund a "special graduation policy" that requires students in low-performing schools to complete 28 credits for graduation. All students would complete an academic core of courses taught to college-preparatory standards. Each student would complete:

- four college-preparatory English/language arts courses;
- four mathematics courses in grades nine through 12 (Algebra I would be the lowest-level course);
- four science courses, including at least three college-preparatory courses such as chemistry, biology, physics and applied physics;
- four college-preparatory social studies courses;
- at least four additional courses in either an academic concentration (mathematics, science or humanities) or a planned career concentration; and
- at least one course (or a demonstration of proficiency) early in high school in computer technology, including word processing, database management, PowerPoint presentations, the Internet and e-mail.

In addition, each school operating under the "special policy" would take several actions to improve student achievement.

- The high school would work with its feeder middle grades schools to get students off to a good start. The middle grades can offer accelerated instruction in language arts, reading and mathematics and can adopt flexible schedules that provide students with more time in these subjects.
- Each school would develop a system to provide students with extra help before, during and after school; on Saturdays; and during the summer.
- The school's guidance and advisement system would provide an adult mentor for each student throughout high school. Mentors would help students learn about educational and career opportunities; set goals for the future; develop and complete challenging programs of study; review the programs annually with their parents; and adjust the plans as needed.
- The school would improve its career/technical studies.
- The high school would be organized into "small learning communities," in which teams of teachers from several disciplines work together to help students succeed in challenging academic and career/technical studies.
- The school would use additional state and district funds to support professional development and other activities related to implementing a five-year improvement plan.

Lesson 2: Urban students learn more when teachers hold them to high standards. States and districts should have accountability systems that focus on how much students learn in academic and career/technical classes. States and districts should use end-of-course exams and make them count toward students' grades in the courses. Results from these exams should be reported in ways that suggest actions that teachers and school leaders can take to improve student learning. These exams can be developed at the local or state level, and they can be combined with efforts to improve classroom assessment and to increase the use of student portfolios. Accountability systems would require each low-performing school to publish an improvement plan; schools that reach specific targets would be recognized and perhaps rewarded.

Lesson 3: Low-performing urban schools improve when they have leadership teams that are dedicated to improving curricula, instruction and student achievement. States and districts can create and support leadership academies to assist low-performing schools. These academies would help school leaders and teachers implement "special policies" and would provide opportunities for

them to learn, share and carry out effective strategies. Leadership teams also would learn to set higher standards; align teachers' assignments, students' work and classroom assessments to those standards; create an organizational schedule that works for students and teachers; develop a system of extra help; and get parents involved in helping their children plan and complete challenging programs of study. The instructors at the leadership academies would be persons who are knowledgeable about research-based school practices and educators who have transformed low-performing schools. Academy staff would serve as on-site coaches, and they would conduct technical-assistance visits to schools and produce written reports that contain recommendations. Academies would help school teams remove barriers to student achievement, including the deep-seated belief that urban students cannot learn at high levels.

Lesson 4: Many low-performing high schools are so "locked into" existing practices and beliefs about their students that they find it difficult to change. These schools need intensive technical assistance from experienced educators from other school districts in the state. These experts are trained to help troubled schools develop data-based improvement plans and take the necessary actions (including personnel changes). They help low-performing schools focus on the bottom line: raising student achievement. Such assistance has been very successful in Kentucky and North Carolina.

Urban districts also can create obstacles to change. They need to give school leaders greater flexibility to raise graduation requirements, to use alternative schedules (such as block schedules) and to allocate resources for site-specific professional development aligned to school improvement plans. For example, students at high schools that have adopted block schedules and have raised graduation requirements from 24 to 30 credits score significantly higher in reading, mathematics and science than do minority students at high schools with lower graduation requirements. **Yet most urban districts are reluctant to allow schools to have different schedules or graduation requirements.**

Lesson 5: Urban students — like other students — learn more from teachers who know their subject matter and how to motivate them. States and districts need to create incentives or bonuses to get good teachers into low-performing schools and retain them. In Florida, an outstanding teacher who remains in one of the state's lowest-performing schools receives an annual bonus of up to $3,500. Potentially good teachers also can be found among liberal arts graduates who can be trained to teach core academic subjects and retired professionals who can make academic and career/technical content "come alive" for students. States and districts could collaborate with a university to design a compressed teacher-training program for these people. The Teach for America program — a component of AmeriCorps — is a model for attracting, training and funding teachers in subjects where there are critical shortages of traditionally certified teachers. Teach for America recruits recent college graduates who are willing to commit three years to teaching in low-performing schools for salaries ranging from $21,000 to $36,000. The program offers deferred, low-interest loans for education and lump sums of up to $9,500 for loan repayment or future tuition. Teachers who are certified through this program complete a five-week training course taught by effective teachers from selected low-performing schools. This program could be expanded to span two summers and the school year between them. States and districts can do a lot to attract a broader array of college graduates who are willing to accept the challenge of working with urban students.

Lesson 6: Teachers in low-performing schools need continual, high-quality professional development. States and districts need to upgrade continually the knowledge and skills of academic and career/technical teachers. One way is to work with colleges and universities to provide teachers from low-performing schools with institutes that span two summers and the school year between them. These institutes would combine content studies with instructional strategies. In this professional-development approach, the best teachers in each high school would help

their colleagues try new approaches and would organize teams of teachers to critique one another's lesson plans, assignments and assessment techniques. This approach would change professional development in low-performing schools from a series of unrelated events into a planned program of training and follow-up.

There are some good teachers in low-performing schools, but others are not "pulling their weight." States and districts should help teachers improve their content knowledge and instructional methods and should replace those who cannot help the schools achieve their goals.

Lesson 7: Urban students learn more in academic and career/technical classrooms that incorporate reading and writing. Urban students who cannot read, comprehend and interpret books and other materials in high school are unlikely to be prepared for a knowledge-based economy. All teachers should involve their students in reading, writing, speaking and discussing ideas. States and districts should require all teachers at low-performing high schools to complete a 50-hour course on using reading and writing in the classroom. The intent would not be to produce "reading and writing teachers"; the intent would be to prepare all teachers to help students learn high-level content through reading and writing. Such staff development would be followed by classroom observations, teamwork and modeling of best practices.

Lesson 8: Urban students benefit from modern, high-quality career/technical studies. States and districts need to help low-performing schools offer high-quality career/technical studies that combine academic and technical content. Such programs would:

- be aligned to state academic standards and national technical standards;
- be taught by teachers who have upgraded their academic and technical knowledge and have learned new teaching methods;
- engage students in using academic and technical skills to solve real-world problems;
- provide opportunities for academic and career/technical teachers to work together; and
- increase the percentage of students who can meet academic and technical literacy goals.

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